

AMENDMENT

Listing of Claims

The following listing of claims replaces all prior versions.

- 1 1. (Currently amended) A system for reassembling asynchronous transfer
2 mode (ATM) data in real time, comprising:
3 a circular buffer for storing ATM data, the ATM data comprising information
4 divided into ATM cells, the ATM cells comprising at least one of virtual path identifier
5 (VPI) information, virtual channel identifier (VCI) information and channel identifier
6 (CID) information;
7 a content addressable memory configured to receive any of the VPI, VCI and
8 CID information related to each ATM cell and configured to provide an index when
9 particular VPI, VCI and CID information is identified, the index corresponding to
10 unique VPI/VCI and VPI/VCI+CID combinations, the index placed in the circular
11 buffer and used to determine an AAL mode of each ATM cell; and
12 a plurality of parallel processing elements configured to analyze the ATM cells
13 and determine a cell type, wherein ATM adaptation layer (AAL) 2 cells and AAL 5
14 cells are reassembled in real-time.
- 1 2. (Previously presented) The system of claim 1, wherein the circular
2 buffer communicates with the plurality of parallel processing elements simultaneously.
- 1 3. (Original) The system of claim 2, further comprising a fragmentation
2 table configured to receive and store data fragments associated with an ATM cell.
- 1 4. (Original) The system of claim 3, further comprising a buffer manager
2 configured to accumulate the data fragments and assemble the data fragments into a
3 frame.
- 1 5. (Original) The system of claim 4, further comprising a statistics
2 memory configured to store statistics associated with the cells.

1 6. (Original) The system of claim 5, wherein the statistics are chosen from
2 an idle cell, an unassigned cell, an operation and maintenance (OAM) cell, an AAL 2
3 cell, an AAL 5 cell, a header error correction (HEC) error cell, a frame count, a byte
4 count, congestion information, AAL5 CRC error count, and resource management
5 (RM) cell count.

1 7. (Original) The system of claim 6, wherein the statistics are gathered for
2 each unique VPI/VCI cell stream.

1 8. (Previously presented) The system of claim 7, wherein the statistics are
2 periodically provided to a processor for display.

1 9. (Currently amended) A method for reassembling asynchronous transfer
2 mode (ATM) data in real time, comprising:
3 providing ATM data to a circular buffer, the ATM data comprising information
4 divided into ATM cells, the ATM cells comprising at least one of virtual path identifier
5 (VPI) information, virtual channel identifier (VCI) information and channel identifier
6 (CID) information;
7 receiving in a content addressable memory any of the VPI, VCI and CID
8 information related to each ATM cell;
9 storing the ATM data in the circular buffer;
10 providing an index when particular VPI, VCI and CID information is identified,
11 the index corresponding to unique VPI/VCI and VPI/VCI+CID combinations, the
12 index placed in the circular buffer and used to determine an AAL mode of each ATM
13 cell; and
14 analyzing the ATM cells to determine a cell type, wherein ATM adaptation
15 layer (AAL) 2 cells and AAL 5 cells are reassembled in real-time.

1 10. (Previously presented) The method of claim 9, further comprising
2 simultaneously communicating between the circular buffer and a plurality of
3 processing elements.

1 11. (Previously presented) The method of claim 10, further comprising
2 receiving and storing data fragments associated with an ATM cell in a fragmentation
3 table.

1 12. (Original) The method of claim 11, further comprising:
2 accumulating the data fragments in a buffer manager; and
3 assembling the data fragments into a frame.

1 13. (Original) The method of claim 12, further comprising storing statistics
2 associated with the cells in a statistics memory.

1 14. (Original) The method of claim 13, wherein the statistics are chosen
2 from an idle cell, an unassigned cell, an operation and maintenance (OAM) cell, an
3 AAL 2 cell, an AAL 5 cell, a header error correction (HEC) error cell, a frame count, a
4 byte count, congestion information, AAL5 CRC error count, and resource management
5 (RM) cell count.

1 15. (Original) The method of claim 14, wherein the statistics are gathered
2 for each unique VPI/VCI cell stream.

1 16. (Original) The method of claim 15, further comprising periodically
2 providing the statistics to a processor for display.

1 17. (Currently amended) A computer readable medium having a program
2 stored thereon for reassembling asynchronous transfer mode (ATM) data in real time,
3 comprising:

4 logic for providing ATM data to a circular buffer, the ATM data comprising
5 information divided into ATM cells, the ATM cells comprising at least one of virtual
6 path identifier (VPI) information, virtual channel identifier (VCI) information and
7 channel identifier (CID) information;

8 logic for receiving in a content addressable memory any of the VPI, VCI and

9 CID information related to each ATM cell;
10 logic for storing the ATM data in the circular buffer;
11 logic for providing an index when particular VPI, VCI and CID information is
12 identified, the index corresponding to unique VPI/VCI and VPI/VCI+CID
13 combinations, the index placed in the circular buffer and used to determine an AAL
14 mode of each ATM cell; and
15 logic for analyzing the ATM cells to determine a cell type, wherein ATM
16 adaptation layer (AAL) 2 cells and AAL 5 cells are reassembled in real-time.

1 18. (Previously presented) The computer readable medium of claim 17,
2 further comprising logic for simultaneously communicating between the circular buffer
3 and a plurality of processing elements.

1 19. (Previously presented) The computer readable medium of claim 18,
2 further comprising logic for receiving and storing data fragments associated with an
3 ATM cell in a fragmentation table.

1 20. (Previously presented) The computer readable medium of claim 19,
2 further comprising:
3 logic for accumulating the data fragments in a buffer manager; and
4 logic for assembling the data fragments into a frame.

1 21. (Previously presented) The computer readable medium of claim 20,
2 further comprising storing statistics associated with the cells in a statistics memory.

1 22. (Previously presented) The computer readable medium of claim 21,
2 wherein the statistics are chosen from an idle cell, an unassigned cell, an operation and
3 maintenance (OAM) cell, an AAL 2 cell, an AAL 5 cell, a header error correction
4 (HEC) error cell, a frame count, a byte count, congestion information, AAL5 CRC
5 error count, and resource management (RM) cell count.

1 23. (Previously presented) The computer readable medium of claim 22,
2 wherein the statistics are gathered for each unique VPI/VC1 cell stream.

1 24. (Previously presented) The computer readable medium of claim 23,
2 further comprising logic for periodically providing the statistics to a processor for
3 display.